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ATTORNEYS AT LAW

Docket No.: 1247-0822-0V PCT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 09/381,631
Applicants: Pierre JEANVOINE, et al.
Filing Date: March 1, 2000
For: METHOD AND DEVICE FOR MELTING AND REFINING MATERIALS CAPABLE OF BEING VITRIFIED
Group Art Unit: 1731
Examiner: VINCENT, S.E.

SIR:

Attached hereto for filing are the following papers:

Appeal Brief with copy of Concise Chemical and Technical Dictionary, Fourth Enlarged Edition (1986), page 1036

Our credit card payment form in the amount of **$500.00** is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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DOCKET NO: 1247-0822-0V PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:	
PIERRE JEANVOINE, ET AL.	:	EXAMINER: VINCENT, S.E.
SERIAL NO: 09/381,631	:	
FILED: MARCH 1, 2000	:	GROUP ART UNIT: 1731
CPA FILED: MAY 23, 2002	:	
RCE FILED: MAY 27, 2004	:	
FOR: METHOD AND DEVICE FOR MELTING AND REFINING MATERIALS CAPABLE OF BEING VITRIFIED	:	

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal of the Final Rejection dated February 15, 2005 of Claims 38-40, 42-46, 50, 56, 77, 78, 98, 101-106, 115 and 116. A Notice of Appeal is **submitted herewith**.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Saint-Gobain Vitrage having an address at 18, Avenue 'Alsace, Courbevoise, France F-92400.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 38-40, 42-46, 50, 56, 77, 78, 98, 101-106, 115 and 116 stand rejected and are herein appealed. Claims 41, 47-49, 51-55, 57-76, 79-97, 99, and 107-114, the remaining claims in the application, stand withdrawn as being directed to a non-elected invention.

IV. STATUS OF THE AMENDMENTS

No amendment under 37 CFR 1.116 has been filed.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

As recited in independent Claim 38, the present invention is a process of manufacturing glass from vitrifiable materials comprising a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, and manufacturing glass from said melted vitrifiable materials.

See the specification at page 2, line 30 through page 3, line 3; and page 9, lines 25-27.

As recited in independent Claim 105, the invention is also a process comprising recycling metal/glass or plastic/glass composite materials, which process includes a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, during said recycling.

See the specification as referenced above for Claim 38, and at page 10, lines 10-18.

As recited in independent Claim 106, the invention is also a process of manufacturing an electronic part comprising a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, during said manufacturing, and manufacturing an electronic part from said melted vitrifiable materials.

See the specification as referenced above for Claim 38, and at page 24, lines 28-29.

VI. GROUNDS OF REJECTION

(A) Claims 38, 39, 42-45, 50, 56 and 98 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. 5,615,626 (Floyd et al) in view of Merriam-Webster's Collegiate Dictionary 10th ed (Merriam-Webster) and U.S. 3,812,620 (Titus et al);[1]

(B) Claims 40, 46, 78, 101-104, 106, 115 and 116 stand rejected under 35 U.S.C. §103(a) as unpatentable over Floyd et al in view of Merriam-Webster and Titus et al; and

(C) Claims 77 and 105 stand rejected under 35 U.S.C. §103(a) as unpatentable over Floyd et al in view of Merriam-Webster and Titus et al, and further in view of U.S. 4,983,549 (Greve).

VII. ARGUMENT

Ground (A)

Claims 38, 39, 42-45, 50, 56 and 98 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. 5,615,626 Floyd et al in view of Merriam-Webster and Titus et al That rejection is untenable and should not be sustained.

As recited in Claim 38, the present invention is a process of manufacturing glass from vitrifiable materials comprising a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid

[1] That the new prior art (Merriam-Webster and Titus et al) are not listed in the statement of the rejection is irrelevant; reliance thereon is all that is necessary. "Where a reference is relied on to support a rejection, whether or not in a 'minor capacity,' there would appear to be no excuse for not positively including the reference in the statement of rejection." *In re Hoch*, 428 F.2d 1341,166 USPQ 406, 407 n.3 (CCPA 1970). See also MPEP 706.02(j).

combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, and manufacturing glass from said melted vitrifiable materials.

Floyd et al discloses a process for disposal of waste materials, including municipal waste such as garbage, industrial wastes, waste materials including rubber and plastics-based materials, and ash waste from municipal waste incinerators and toxic waste incinerators, wherein the waste is charged to a reactor of a top-submerged lancing injector reactor system, containing a molten slag bath maintained in a turbulent condition during charging of the waste by top-submerged injection therein of a free-oxygen containing gas, using at least one top-submerged lance of the system. The waste is taken into the molten bath and is caused to circulate therein to a combustion/oxidation zone generated by the top-submerged injection. Constituents of the waste are subjected to free-oxygen of the injected gas in that zone and to heat energy of the slag, and thereby combusted/oxidized and/or decomposed. See the Abstract thereof. In addition, Floyd et al discloses that while the waste is being combusted in the reactor, the slag may be maintained at a temperature of from about 1100°C to 1800°C (column 3, lines 34-36 and column 6, lines 3-10). Floyd et al discloses further that rather than simply producing an ash residue as in existing processes, the process of their invention forms a slag product which, being a glassy phase and essentially non-porous (column 6, line 57), essentially encapsulates any ash produced and retains in solid solution any heavy metals which are not able to form a fume (column 7, lines 44-48). As disclosed at column 10, lines 45-48, Floyd et al is concerned with substantially complete combustion/oxidation of waste charged to their reactor.

The slag of Floyd et al acts, in essence, as a vehicle for the substantially completely combusted/oxidized waste therein. Floyd et al discloses that the slag may be tapped from time to time and can be granulated and/or further processed such as for use in a building

material, for such engineering purposes as shot blasting, or for use as a landfill (column 6, lines 50-60; column 13, lines 18-21).

Floyd et al's apparatus is essentially an incinerator, not a melting chamber.

The Examiner finds that Floyd et al's municipal waste would include various "glazings." In reply, municipal waste would include just about anything. Glass materials are not even listed in Floyd et al. But even if it were assumed that the waste materials of Floyd et al would at least sometimes include glazings, Floyd et al still does not disclose manufacturing glass. In addition, that slag is disclosed as a "glassy" byproduct is not suggestive of anything with regard to manufacturing glass. Moreover, the materials to be treated in the present invention are limited to vitrifiable materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, a substantially narrower group of materials than the municipal and industrial waste treated by Floyd et al. In other words, the present invention **intentionally** treats vitrifiable materials. Floyd et al, at best, treats vitrifiable materials only if such materials happen to be present in their municipal or industrial waste.

The Examiner particularly relies on the example in Floyd et al wherein waste comprising ash from an existing process toxic waste incinerator is treated by smelting in a reactor according to Floyd et al's invention, wherein the waste feed contains a number of oxides, which the Examiner finds are glass-forming materials. As the table at column 13 shows, the carbon therein is almost completely combusted, while there is some change in the relative amounts of oxides present in the slag, based on their amounts in the waste feed. The Examiner finds that this example is a glass melting process.

In reply, whether or not the various oxides in the waste actually melt, Floyd et al does not disclose manufacturing glass, since Floyd et al discloses their slag only as a building

material, for such engineering purposes as shot blasting, or for disposal for landfill (column 6, lines 58-60; column 13, lines 18-22).

In response to Applicants' argument that Floyd et al is not concerned with melting waste, the Examiner notes Floyd et al's disclosure at column 8, lines 6-25 that some of the waste is combusted or "simply dissolved into the slag bath."

In reply, the disclosure in Floyd et al at column 8, lines 6-25, relied on by the Examiner, relates to other particulate fillers present in rubber and plastics material that are "depending on their composition, simply dissolved in the slag bath." However, Floyd et al discloses nothing else with regard to such other particulate fillers. Indeed, Floyd et al seems most concerned about those fillers that combust (column 2, lines 52-64). At any rate, Floyd et al's ultimate goal is substantially complete combustion or oxidation, not melting, as pointed out above.

In sum, Floyd et al fails to anticipate the presently-claimed invention because, as pointed out above, Floyd et al fails to describe manufacturing glass.

The Examiner relies on Merriam-Webster for a definition of "glass" in an attempt to demonstrate that the broadest reasonable interpretation of the term "glass" as used in the present claims would cover the process disclosed by Floyd et al.

In reply, since the present invention is directed to persons of ordinary skill in the art of making what are commonly known as glass and glass-containing products, such as the type of products described in the specification, for example, at page 1, lines 8-13, it is not seen what relevance Merriam-Webster has to the issues. At best, Floyd et al discloses production of a slag for various uses, but not for manufacturing glass, as "glass" would be understood in the context of the present invention.

The Examiner relies on Titus et al for a disclosure that municipal and industrial wastes commonly include some amount of glass materials, and that Titus et al supports, if not discloses, an interpretation of "slag" as being synonymous with "molten glass."

Titus et al discloses an apparatus and process for segregating and decomposing heterogeneous waste materials which, in Titus et al's invention, includes glass. Titus et al discloses that the glasses typically consist primarily of silicon dioxide with perhaps 25% other glass forming elements, and that these materials are not readily decomposed but are meltable into a slag which, upon refining, may be reused to a considerable extent (column 5, lines 8-13). In Titus et al's invention, glass may form a slag (column 6, line 34), which slag may be tapped off, as illustrated by tap 33 in the figure therein.

While Titus et al thus discloses that a slag may be obtained from their invention, Titus et al discloses and suggests nothing with regard to whether a glass could be manufactured from the reactor of Floyd et al. Nor does Titus et al support the finding that "slag" is synonymous with "molten glass." While a slag containing glass-forming oxides, when at a temperature at which glass is molten, may thus contain molten glass, the above-quoted terms are not synonymous. Indeed, as confirmed by the Concise Chemical and Technical Dictionary, Fourth Enlarged Edition (1986), page 1036 **(copy enclosed)**,[2] the term "slag" *per se* is defined as "product resulting from the action of a flux on the nonmetallic constituents of an ore, or on the oxidized, undesired metallic constituents." As this reference shows, there is more than one type of slag.

[2] The dictionary reference is evidence submitted under 37 C.F.R. § 1.116(e) (submitted after final rejection but before or on the same date of filing an appeal), and was not earlier presented because the Examiner did not previously rely on Titus et al.

Claim 98

Claim 98 is separately patentable. Since Floyd et al does not disclose manufacturing glass, the product made by Floyd et al's process is necessarily not the glass manufactured by the process of Claim 38.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (B)

Claims 40, 46, 78, 101-104, 106, 115 and 116 stand rejected under 35 U.S.C. §103(a) as unpatentable over Floyd et al in view of Merriam-Webster and Titus et al. That rejection is untenable and should not be sustained.

The deficiencies in the combination of Floyd et al, Merriam-Webster and Titus et al for purposes of anticipation have been discussed above. For the same reasons, the above combination of references do not otherwise render the claims unpatentable.

Notwithstanding everything argued above, Floyd et al is nonanalogous art. Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. In re Clay, 966 F.2d 656, 658, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992). See also MPEP 2141.01(a).

It must be kept in mind that the hypothetical person of ordinary skill in the art would not have had knowledge of Applicants' discovery, unlike the Examiner, in seeking to solve the problem which Applicants sought to solve. One skilled in the art would have had no reason to look at any art concerning disposal of waste materials.

Floyd et al is **not** from the same field of endeavor as the present invention which, as described in the specification herein at page 1, lines 4-7, relates to a process for melting and refining vitrifiable materials for the purpose of continuously feeding glass-forming plants with molten glass. Floyd et al's field of endeavor is disposal of waste materials. Nor is Floyd et al reasonably pertinent to the particular problem with which the inventors herein were involved. As described in the specification at page 2, lines 21-29, the object of the present invention was to improve melting and refining processes, aiming especially to use plants which are more compact and/or to have greater operating flexibility and/or greater production efficiency and/or to manufacture glass that has hitherto been difficult to melt or to refine and/or with a low energy cost, etc., without various industrial advantages, as described earlier in the specification, being obtained to the detriment to the quality of the glass produced. Floyd et al is not concerned with any problems concerning the production of glass.

Thus, one skilled in the art would not look to Floyd et al to solve a problem regarding recovering vitrifiable materials, such as glazings.

The subject matter of Claim 38 is very advantageous for the whole glass industry. It makes it possible to feed the melting furnace with at least partly organic materials and glass/organic composite materials that were hard to recycle (like windshields or mineral wool with organic binder). This is possible only because the burners are submerged ones. Only those particular burners make it possible to bring the combustibles at their vicinity, below the bath of molten glass. Furthermore, as explained in the specification, the submerged burners generate a lot of convection movements within the bath of molten glass, which makes the permanent renewal of the combustible elements at their vicinity possible. This is very innovating and could not have been imagined with conventional melting furnaces (either those using immersed electrodes and called electrical furnaces or those using burners above the bath of molten glass and sometimes called gas furnaces). This is a completely new use of

the technology of the submerged burners (recycling/valorization of composite/waste materials), which renders it more attractive.

Floyd et al would have provided no clue as to the above.

Claim 40

Claim 40 is separately patentable, because Floyd et al neither discloses nor suggests the subject matter of Claim 38, wherein the vitrifiable materials contain composite materials comprising glass and metal. As discussed above, Floyd et al does not even mention glass, and thus does not disclose or suggest such a composite material.

Claim 46

Claim 46 is separately patentable, because Floyd et al neither discloses nor suggests the subject matter of Claim 38, wherein the melting is preceded by a step of preheating the vitrifiable materials to at most 900°C. Floyd et al shows no such preheating.

The Examiner finds that a significant proportion of the feed stream of Floyd et al is incinerator ash or steel swarf, relying on the example therein, and in some cases, recycled slag, relying on the disclosure at column 6, lines 53-56, and finds further that an "immediately preceding incineration or steel refining process would have provided preheated vitrifiable materials." The Examiner then holds that it would have been obvious to preheat the materials at 900°C or lower "since the incineration of organic matter would likely have taken place well below 900°C, and the incinerator ash would have to be rushed from the incineration from the melting stage to prevent it from cooling excessively."

In reply, this is merely unsupported speculation on the Examiner's part, and there is no reason to believe that such preheating would have been limited to a maximum temperature of 900°C.

Claim 78

Claim 78 is separately patentable, because Floyd et al neither discloses nor suggests the subject matter of Claim 40, wherein the composite materials comprising glass and metal are at least one of glazing with metallic coating, glazing with enamel coating, and glazing with electrical connecting means. Floyd et al shows no such materials.

While acknowledging that Floyd et al does not disclose any of the materials recited in Claim 78, the Examiner finds that motor vehicle tires and vehicle battery casings, disclosed in Floyd et al as wastes applicable to their invention (column 2, lines 49-51) "are known to contain metallic belts and metallic electrodes, respectively. Considering that all of the waste was charged into a molten slag at glass or at slag melting temperatures, it would not have mattered whether the metallics were attached to glass parts or organic parts. The metal would have oxidized rapidly no matter what it was attached."

In reply, and as discussed above, glass materials, i.e., glazings, are not even listed in Floyd et al.

Claim 101-104

Claims 101-104 are each separately patentable, because Floyd et al neither discloses nor suggests any of the glass products of these claims.

The Examiner finds that "once the vitrifiable materials of Floyd et al are in a molten form, it would have been obvious to perform any well-known forming process on the molten materials, and that no specific method steps for forming such products are claimed, only a general 'manufacturing' step is present, and that the final form of the molten glass does not result in a manipulative difference as compared to the teachings of Floyd et al to manufacture glass products". In addition, the Examiner finds for Claim 102, although this finding would

appear to apply to each of the presently-grouped claims, that "future use or properties of the product do not change the manipulative steps of the process of the invention."

In reply, since Floyd et al does not suggest making glass *per se*, Floyd et al clearly do not suggest any particular type of glass. In addition, the manufacturing step is still a step, and requires that glass be manufactured from the melted vitrifiable materials to make the type of glass as recited in the claims.

Claim 106

Claim 106 is separately patentable, because Floyd et al neither discloses nor suggests manufacturing an electronic part. As discussed above, the only uses disclosed by Floyd et al for their slag product is as an undefined "building material," for such engineering purposes as shot blasting, or as a landfill. The Examiner finds that "electronic part" reads on any glass shape that could be used as an insulator. In reply, Floyd et al, as discussed above, does not disclose or suggest any manufactured glass product.

Claim 115

Claim 115 is separately patentable, because Floyd et al neither discloses nor suggests the subject matter of Claim 38, wherein the vitrifiable material is melted into a foamy glass. Floyd et al does not show foamy glass. Indeed, the slag of Floyd et al, which the Examiner relies on, is disclosed as essentially non-porous (column 6, line 57).

The Examiner's findings regarding Claim 115 are the same as those for Claims 101-104. Applicants' response, above, applies herein as well.

Claim 116

Claim 116 is separately patentable, because Floyd et al neither discloses nor suggests the subject matter of Claim 115, wherein the foamy glass has a density of approximately 0.5 to 2 g/cm^3.

The Examiner simply finds that this subject matter would have been obvious, based on the same findings regarding Claims 101-104 and 115. Applicants' response, above, applies herein as well.

In addition, since Floyd et al discloses and suggests nothing with regard to a foamy glass, it follows that Floyd et al discloses and suggests nothing with regard to a density thereof. Moreover, Floyd et al discloses specifically that the slag of their invention is essentially non-porous (column 6, line 57). It is the slag of Floyd et al that is disclosed as having a subsequent utility. Clearly, one skilled in the art would not take from Floyd et al that a foamy glass could be obtained therefrom.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (C)

Claims 77 and 105 stand rejected under 35 U.S.C. §103(a) as unpatentable over Floyd et al in view of Merriam-Webster and Titus et al, and further in view of Greve. That rejection is untenable and should not be sustained.

The deficiencies in the combination of Floyd et al, Merriam-Webster and Titus et al have been discussed above. Greve does not remedy these deficiencies.

Floyd et al discloses and suggests nothing pertaining to glass recycling. The only disclosure of recycle in Floyd et al is "at least some slag can be recycled to the reactor as

low-energy feed stock for controlling the bath temperature" (column 6, lines 55-56), clearly not something one would recycle glass for.

Greve discloses a method for recycling reinforced plastic composite materials, such as glass reinforced plastic composite materials, wherein the materials are pyrolyzed to separate the plastic matrix material and the glass reinforcement material, from which glass reinforcement material virgin glass is obtained. While Greve clearly provides motivation to separate glass from plastic in the recycling of glass reinforced plastic composite materials, there is no disclosure or suggestion in the applied prior art that such separation could be obtained using Floyd et al's process. Indeed, without the present disclosure as a guide, one skilled in the art would not have combined Floyd et al and Greve.

Accordingly, it is respectfully requested that this rejection be REVERSED.

VIII. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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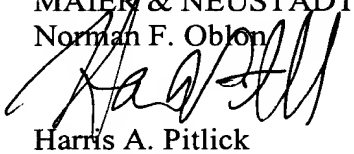

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CLAIMS APPENDIX

38. Process of manufacturing glass from vitrifiable materials comprising a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, and manufacturing glass from said melted vitrifiable materials.

39. Process according to claim 38, wherein the combustible elements are selected from the group consisting of coal, composite materials comprising glass and plastic, and organic materials.

40. Process according to claim 38, wherein the vitrifiable materials contain composite materials comprising glass and metal.

42. Process according to claim 38, wherein the oxidizer gas comprises air, oxygen-enriched air, or oxygen.

43. Process according to claim 38, wherein the melting of the vitrifiable materials takes place in at least one melting chamber which is equipped with burners passing through its side walls or passing through the floor wall or suspended from the roof or from superstructures, or any combination of sidewalls, floor and roof, so that combustion regions of said burners or combustion gases develop in the mass of vitrifiable materials being melted.

44. Process according to claim 38, wherein the combustion regions created by combustion of the combustible mixture or gaseous products resulting from combustion of the combustible mixture convectively stir the vitrifiable materials.

45. Process according to claim 43, wherein the height of the mass of vitrifiable materials in the melting chamber and the height at which the combustion regions or gases resulting from the combustion develop, are adjusted so that the said gases remain within the mass of said vitrifiable materials.

46. Process according to claim 38, wherein the melting is preceded by a step of preheating the vitrifiable materials to at most 900°C.

50. Process according to claim 38, wherein the melting is carried out at 1400°C at most.

56. Process according to claim 43, wherein all or some of the vitrifiable materials are introduced into the melting chamber below the level of the mass of vitrifiable materials being melted.

77. Process according to claim 39, wherein the combustible elements are composite materials comprising glass and plastic, and which are laminated glazing or mineral fibers with organic binders.

78. Process according to claim 40, wherein the composite materials comprising glass and metal are at least one of glazing with metallic coating, glazing with enamel coating, and glazing with electrical connecting means.

98. A product obtained by the process of claim 38.

101. The process according to claim 38, wherein the glass is flat glass.

102. The process according to claim 101, wherein the flat glass has a residual blue color and a solar-protection or fire-resistance function.

103. The process according to claim 38, wherein the glass is in the form of a bottle or a flask.

104. The process according to claim 38, wherein the glass is glass wool or glass fiber.

105. A process comprising recycling metal/glass or plastic/glass composite materials, which process includes a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, during said recycling.

106. A process of manufacturing an electronic part comprising a step of supplying all or part of the thermal energy necessary for melting vitrifiable materials by injecting a combustible mixture comprising at least one fuel and at least one oxidizer gas, or gaseous products resulting from combustion of the combustible mixture, below the level of the mass of said vitrifiable materials, and melting said vitrifiable materials, wherein said vitrifiable materials comprise liquid or solid combustible elements, or mixtures thereof, and materials selected from the group consisting of batch materials, cullet, vitrifiable waste, and mixtures thereof, during said manufacturing, and manufacturing an electronic part from said melted vitrifiable materials.

115. Process according to claim 38, wherein the vitrifiable material is melted into a foamy glass.

116. Process according to claim 115, wherein the foamy glass has a density of approximately 0.5 to 2 g/cm^3.

EVIDENCE APPENDIX

Concise Chemical and Technical Dictionary, Fourth Enlarged Edition (1986), page 1036, submitted with this Appeal Brief.

(While 37 CFR 41.37(c)(1)(ix) limits evidence to that "entered by the examiner," it is assumed that this evidence will be entered.)

RELATED PROCEEDINGS APPENDIX

None.

FOURTH ENLARGED EDITION

CONCISE CHEMICAL AND TECHNICAL DICTIONARY

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skiatron. Cathode-ray tube in which opacity of the screen is varied as a function of beam intensity.
Skiff. Water treatment.
skimmer. Iron plate or bar for deflecting slag into a separate slag runner while pig iron is being tapped from a blast furnace.
skimmetin. $C_9H_6O_3$; m.w. 162; m.p. 226–228 (dec.).
skimmianine. $C_{14}H_{13}NO_4$; m.w. 259.25; ylsh. cr.; m.p. 175; i.w.; s.al.; alkaloid.
skimmin. $C_{15}H_{16}O_8 \cdot H_2O$; m.w. 342.14; wh. need.; m.p. 210; s.h.w.; s.al.; glucoside.
skimmings. Dross skimmed from the surface of molten metal.
skim, plastics. Streaks of dense seeds or pits.
skin, cased. Skin drawn off an animal without cutting along belly.
Skine. Methyl ethyl ketoxime.
skin effect. Increase in ratio of current that flows near the surface to the total increase in current passing through a conductor with increase of frequency.
skin factor. Biotin.
Skinfoil. Antiskinning comp.
skin, ingot. Outer, solidified surface of an ingot, formed during the period of cooling of the ingot and while the interior is still molten.
Skinintact. Proteins from bovine serum extract.
skinning. Formation of skin on surface of varnishes or paints left exposed, or in partially filled closed cans.
Skino #1. Butyraldoxime.
Skinotan S 10. Polysiloxane polyglycol ether.
skin recovery. Carbon restoration to decarburized steel surfaces by heating in a controlled atmosphere, based on carbon pressure balance.
Skiodan. Sodium iodomethane sulfonate.
skip. Bucket, mounted on wheels, for carrying the charge to a metallurgical furnace.
skiver. Grain side of a split sheepskin.
skiving. Removing of superfluous flesh from hides, or separation of the grain.
Skliro. Lanolic acids.
Skomulgol 70B. Alkyl naphthalene sulfonate.
skoto-. Prefix signifying dark.
SKP 104. Polyurethane alkyd.
Skraup's synthesis. Synthesis of quinoline by heating aniline and glycerol with sulfuric acid and nitrobenzol or arsenic acid as oxidizing agent.
Skulite. Ammonium sulfate.
skull. Film of metal and dross remaining behind in a pouring vessel after pouring of the metal.
skullcap. Scutellaria.
skutterudite. Gray-colored, lustrous mineral alloy, cobalt arsenide.
SKW 131. Dicyandiamide.
Sky. Detergent.
Skybond. Heat-reactive aromatics that cures to a cross-linked polyimide resin.
skylite. Polyelectrolyte.
Skyprene. Polychloroprene.
sl. Slightly.
Sl. Viscose.
SLA. Special Libraries Association.
slacken. Slag, obtained in metal smelting, deliberately added to fresh ore prior to smelting, to prevent fusion during heating.
slacking. Degradation in size (coal).
slaframine. 1-Acetoxy-8-amino octahydro indolizine; alkaloid.
slag. Product resulting from the action of a flux on the nonmetalic constituents of an ore, or on the oxidized, undesired metallic constituents.
slag, acid. Slag with more silica than needed to neutralize earthy bases.
slag, basic (basic phosphate; Thomas metal; Belgian slag). Slag resulting from the basic Bessemer or basic open-hearth steel process; very impure glass composed of basic silicates.
slag, black. First slag formed in basic electric steel manufacture; contains free carbon.
slag, blast furnace. Nonmetalic product obtained simultaneously with iron in blast furnaces; consists substantially of calcium silicates and calcium aluminosilicates.
slagging. Treating refractory gangue with fluxing agents to form a slag.
slag, sharp. Lead silicate slag from dried copper refining slime.
slag, white. White slag with the carbon content converted to calcium carbide.
slag wool. Mineral wool.
slake. To crumble or react with water.
slake trough. Water tank for cooling metal after it has been heated in a blacksmith's forge.
slaking. Disintegration of clay in water; addition of water to quicklime (calcium oxide) to form slaked lime (calcium hydroxide).
slasher. Equipment for applying warp size to yarn.
slashing. Dressing or sizing of yarns to prevent roughening during weaving.
slate. A microgranular metamorphic rock (argillaceous) having excellent parallel cleavage so that it can be split into relatively thin slabs.
slate black. Mienral black.
slate flour. Grayish, amorphous solid; sp.gr. 2.6–3.3.
slave mechanism. Device that responds to signals put out by a monitor that varies a specific detail in work.
slavikite. $MgFe_3(OH)_3(SO_4)_4 \cdot 18H_2O$; min.
Slaycris. Dental wax.
sld. Solid.
Slecorol (Siecusist; Siecoterg). Lauryl sulfate.
sleek. Fine scratch, with smooth boundaries produced in polishing glass.
Sleek. NH_4OH, surfactant, detergent.
Sleep-Eze (new). Pyrilamine.
Sleevcil. Lubricant.
sleeving. A braided, knitted, or woven tube.
slenderness ratio. Length of a test piece, divided by the square root of the cross-sectional area.
SLES. Na-laureth-3-sulfate.
S-level (s-state). Atomic state in which azimuthal quantum number equals zero.
sley. Number of warp yarns per inch in woven cloth.
slick. Slime.
slickens. Slime.
slicker. Tool for smoothing mold surfaces, particularly after application of a mold wash.
slide rule. Mechanical device used for multiplication, division, raising to powers, and other arithmetic processes, consisting of two rules, one sliding in a groove in the other, both having logarithmic scales.